Smokeless Tobacco: Trends in Use & Interventions

MDQuit Resource Center
Hosted by Allegany County Health Department
June 26th, 2008

Goals for the Day

- Provide information about Smokeless
- Open Dialogue about Maryland experiences
- Brainstorm Solutions/Approaches both to Prevention and Cessation of Smokeless Use

Information Overview

- Smokeless Types/Effects
- Data

-Maryland -Western MD

-National

- Prevention
- Treatment
- Policy

Types of Smokeless

- Snuff
  - Finely ground & cut; cured tobacco
  - Moist: put in crevice of the mouth between gum and cheek or lip
  - Dry: Inhaled through nostrils
- Chew
  - Loose leaf, plug & twist
  - Placed in the cheek
  - Chewed to mix tobacco with saliva

Types of Smokeless

- Snus
  - Pouch or loose moist snuff
  - Air-cured tobacco with water, salt & flavor additives
  - Less tobacco-specific nitrosamines (TSNAs) than most smokeless products in the U.S. because the tobacco is not fermented
  - Tobacco-specific nitrosamines are chemicals that are known to cause cancer

Others

- Low-nitrosamine pouches of snuff such as Exalt® or Revel®
  - Tobacco lozenges such as Ariva® and Stonewall®

Absorption

- Through mucous membrane of the mouth
- Affected by pH of the product and the mouth
- Absorption and action rate is slower than when tobacco is smoked, but blood nicotine levels are as high or higher than in smokers
- Some smokeless users report quitting cigarettes is easier

Levels of Nicotine

- Smokeless tobacco delivers a high dose of nicotine
  - Chew: 4.5 milligrams
  - Snuff: 3.6 mg
  - Cigarettes: 1 to 2 mg
- Average size dip in mouth for 30 minutes about same as 3 cigarettes
- A 2-can-a-week snuff dipper gets as much nicotine as a 1½ pack-a-day smoker
- Despite difference in concentrations of nicotine, blood levels of nicotine throughout the day can be similar in smokers and smokeless tobacco users

We know it is harmful…

- **International Agency for Research on Cancer** IARC Monograph 89, 2007
  - **"There is *sufficient evidence* that smokeless tobacco causes oral cancer and pancreatic cancer in humans..."**

Toxins in Smokeless Tobacco

Carcinogen	amount (per gram)
Benzo[*a*]pyrene	0.1-90 ng
Formaldehyde	1.6 – 7.4 µg
Acetaldehyde	1.4 – 7.4 µg
Crotonaldehyde	0.2 – 2.4 µg
1,1-Dimethylhydrazine	60 – 147 µg
Ethyl carbamate	310 – 375 ng
Hydrazine	14 – 51 ng
Arsenic	500 – 900 ng
Nickel	2 – 6 µg
Chromium	1 – 2 µg
Cadmium	1.3 – 1.6 µg
Lead	8 – 10 µg
Polonium-210	0.2 – 1.2 pCi

Hoffmann D, et al. *JNCI*, 87:1862-9 (1995); Hecht SS. Cigarette smoking and cancer. In Rom WN, eds. *Env. Occ. Med.* New York: Lippincott-Raven, 1479-99 (1998); Hoffmann D, et al. *JNCI* 79:1281-6 (1987).

Influence on Body Systems

- **Compared to those who quit *all* tobacco use, men who *switched* from cigarettes to smokeless had higher death rates from heart disease, stroke, cancer of the mouth & lung, and all causes of death combined**
  - **Unclear: whether the heart disease was *caused* by the smokeless products**
  - **http://www.cancer.org/docroot/PED/content/PED_10_13X_Quitting_Smokeless_Tobacco.asp**

Dental effects

- Leukoplakia
  - White patches or sores
  - Lesions that form where tobacco is placed
  - Can lead to cancer of the mouth
  - Occur in over ½ of users in first 3 years of use
- Recession or peeling back of gum tissue
  - Loss of teeth

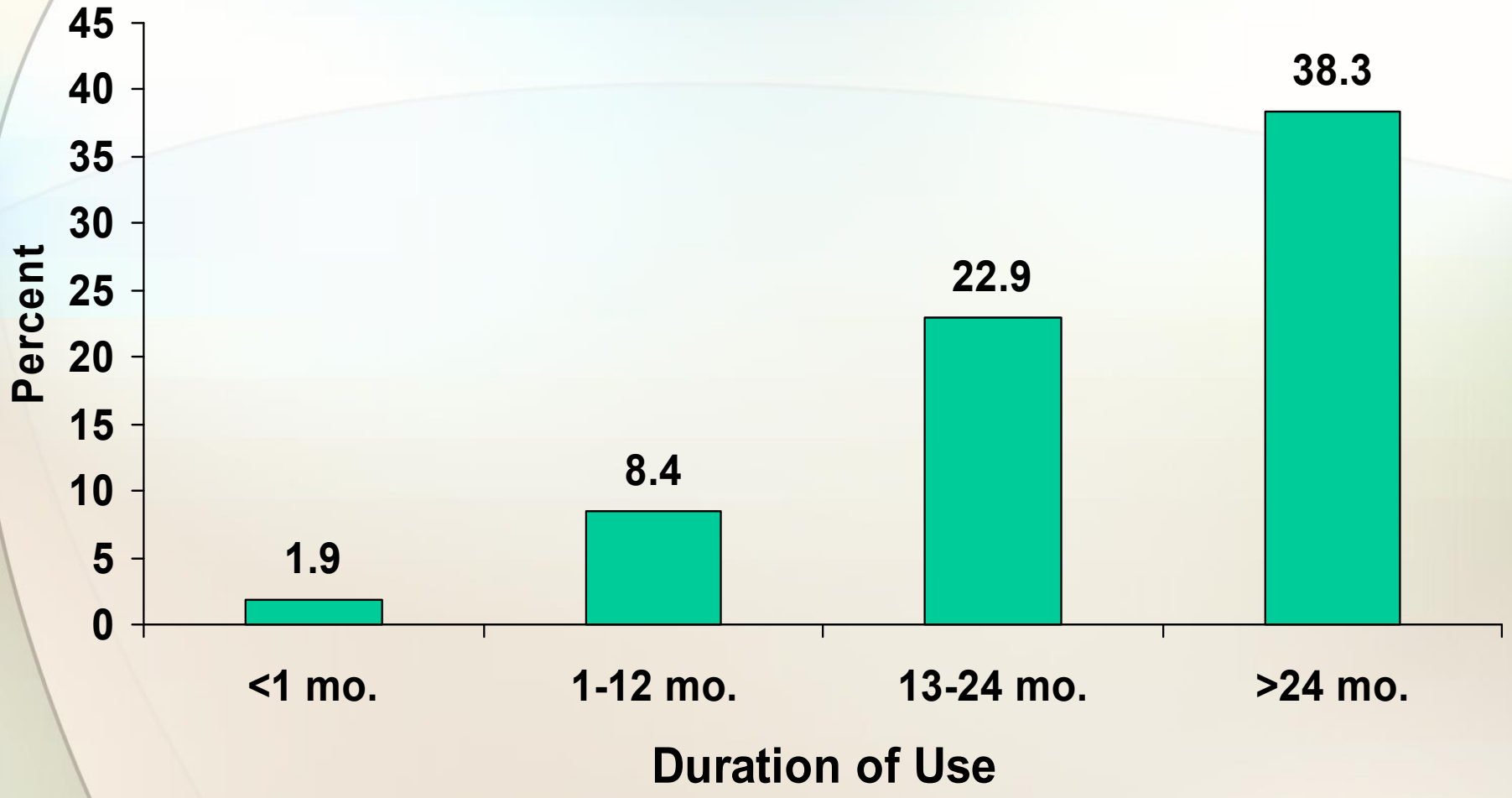
Dental effects

- **Some evidence: snuff use leads to tooth decay and tooth loss**
- **Chewing tobacco (not snuff) promoted carcinogenic bacteria and lesions**
- **Chew users (not snuff) had more dental caries than nonusers**
  - Dental caries: infectious disease that damages structures of teeth causing decay

Prevalence and Severity of Lesions in United States

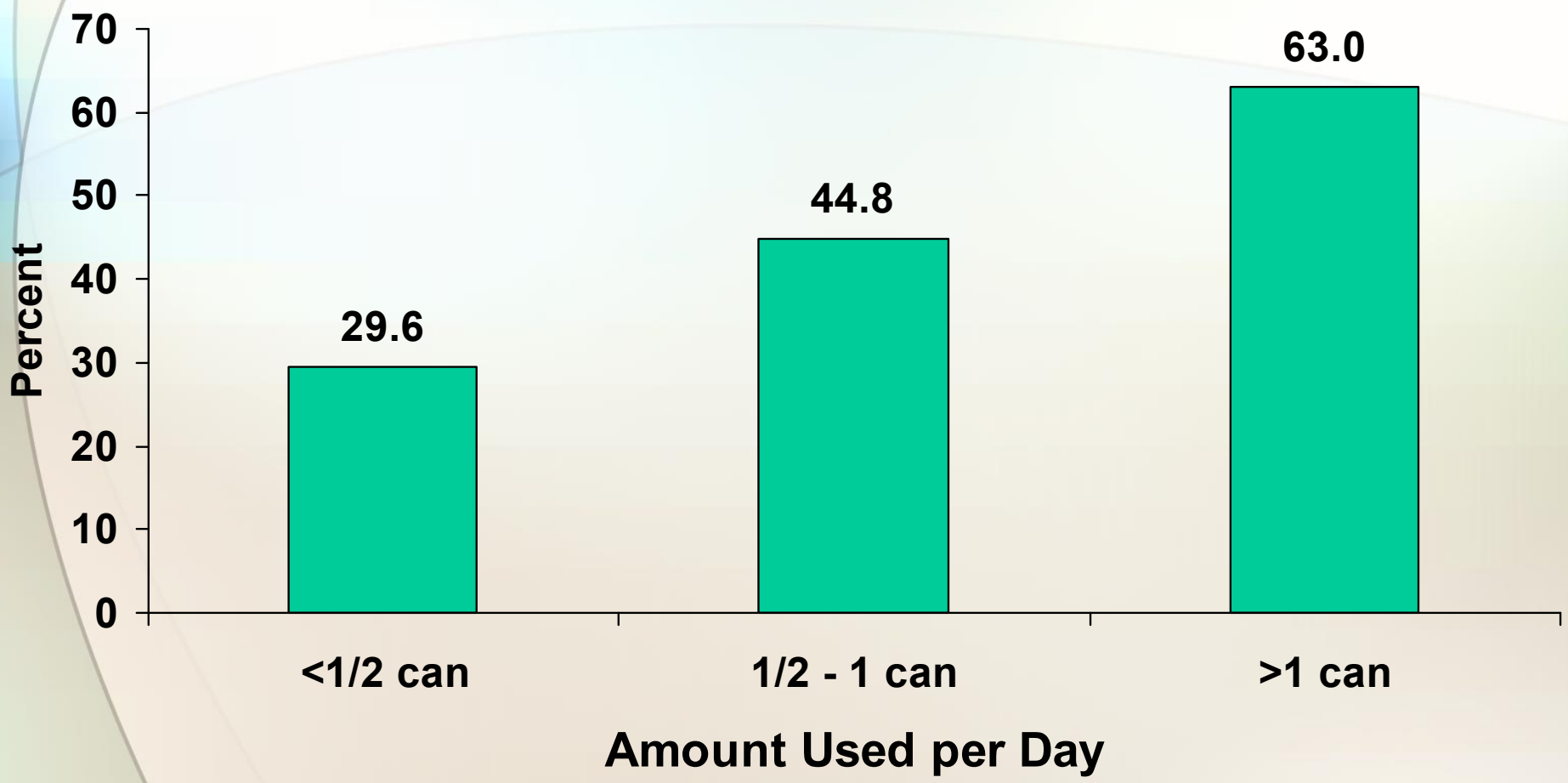
- Prevalence among adolescent snuff users: 13%–65%
  - National study: 35%
- Prevalence among adult snuff users: 34%–79%
- Most lesions resolve after quitting

Lesions Among Snuff Users Age 12-17 Years, by Duration of Use



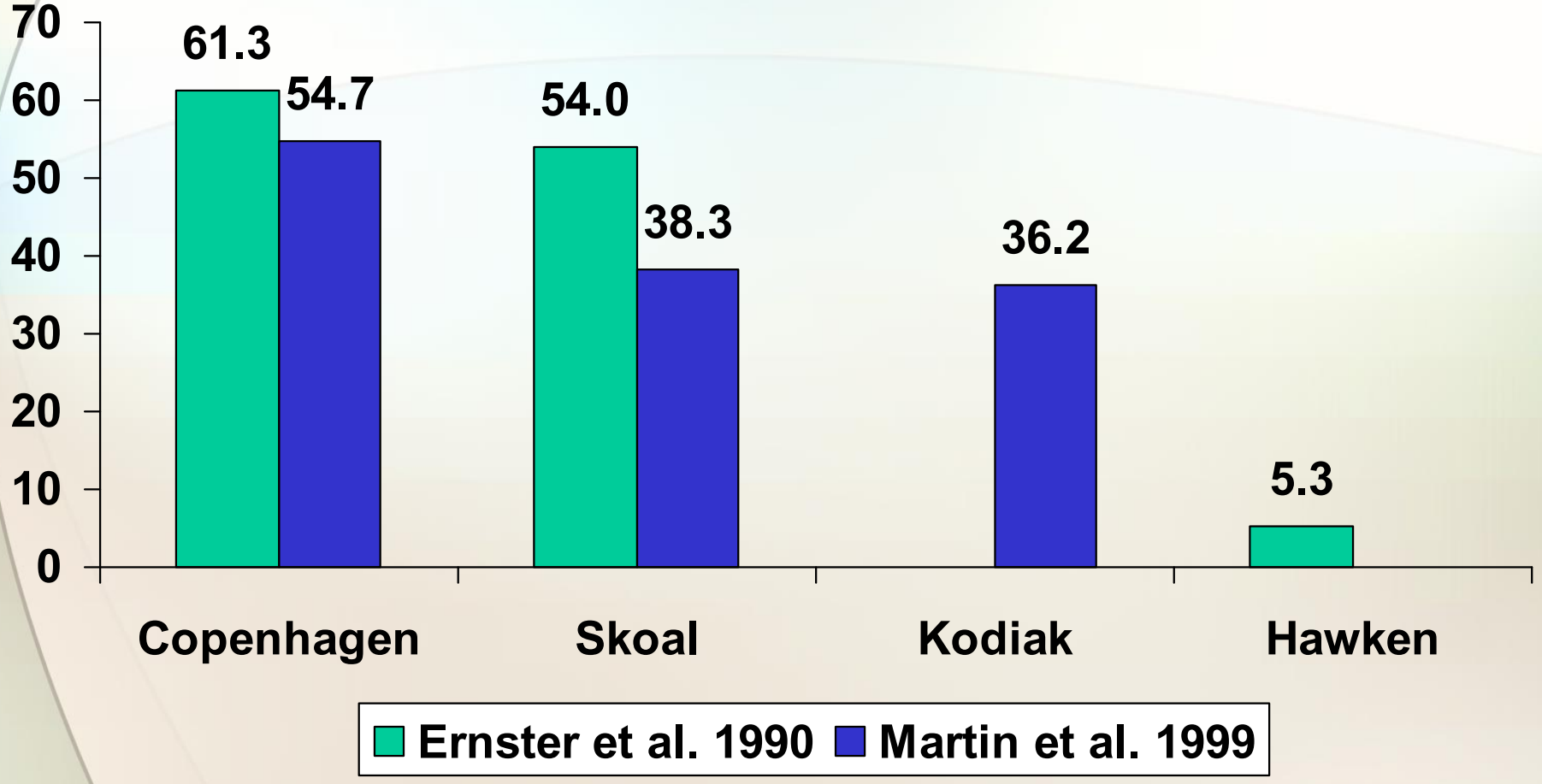
Tomar et al. *J Dent Res* 1997; 76:1277-86

Lesions Among Air Force Recruits, by Amount Used per Day



Martin et al. *J Am Dent Assoc* 1999;130(7)945-54

Prevalence of Lesions, by Brand of Snuff



Martin et al. *J Am Dent Assoc* 1999;130(7)945-54
Ernster et al. *JAMA* 1990;264(2)218-24

Harm Reduction

- Smokeless has been used as a smoking cessation method
  - Some who use it to quit smoking do quit using the smokeless tobacco, but some do not
- SNUS
  - Likely to lead to lower cancer rates
    - Lower tobacco-specific nitrosamines because it is not fermented
  - Swedish snus users had lower cancer-causing agents in their bodies than those who used more common smokeless products (2004)
  - However, snus users still had higher levels than people who used nicotine patches
  - American brands may be less carcinogenic than Swedish brands
  - American brands have less nicotine, so may not be as effective for cessation

DATA

Prevalence of Use

- Nationwide
  - 2.3% of individuals ≥18 years old are current users (i.e., used chew/snuff at least 20 times during lifetime & use chew/snuff every day or some days)
    - 2005 Nat'l Health Interview Survey, NHIS
  - 3.3% of individuals ≥12 years old used in past month
    - 2006 SAMHSA Nat'l Survey on Drug Use and Health
    - Age: 12-17=2.4%
      18-25=5.2%
      25+ = 3.2%

Prevalence

- **High school** (CDC, 2007)
  - 13.6% of males
  - 2% females
- **Middle school** (CDC, 2007)
  - 4% males
  - 2% females
    - used ST at least once in prior 30 days
- **Teens who use ST are more likely to smoke later**
    - American Cancer Society: http://www.cancer.org/docroot/PED/content/PED_10_13X_Quitting_Smokeless_Tobacco.asp

Discussion

- Perceptions about the use of smokeless in Maryland
- Important issues in your clinics/centers

Maryland Data on Smokeless

MYTS 2000, 2002 & 2006

- Maryland Youth Tobacco Survey (MYTS) is a self-report survey conducted in randomly selected middle and high schools in every county in Maryland to present an overall prevalence of tobacco use and attitudes of youth in the state
- This survey was conducted in the Fall of 2000, 2002 and 2006

Stats 101: Relative Change

- Relative change is calculated as the Absolute Change divided by the percent of adolescents in 2000

- For example, if in 2000 the statewide rate of Smokeless Tobacco Use was 8% and in 2006 the rate was 6%

2000 (%)	2006 (%)
8.0	6.0

- Absolute Change would be -2.0%
  - 6.0% - 8.0% = -2.0%
- the Relative Change would be -25%
  - -2.0% ÷ 8.0%

Smokeless Tobacco Use: Statewide, Region & County for Underage Youth

Region/Jurisdiction	2000		2002		2006		Relative Change
	N	%	N	%	N	%	
Statewide	**14,109**	**3.5**	**15,511**	**3.7**	**15,605**	**3.6**	**2.8%**
Baltimore Region	6,550	3.5	7,123	3.8	6,719	3.5	0.0%
Anne Arundel	1,306	3.5	1,499	4.0	1,500	3.9	11.4%
Baltimore City	1,490	3.6	1,768	4.3	1,187	3.1	-13.9%
Baltimore Co.	1,358	2.6	1,565	2.9	1,860	3.4	30.8%
Carroll	448	3.2	587	4.0	614	3.8	18.7%
Harford	927	4.8	732	3.7	681	3.3	-31.2%
Howard	1,021	4.6	972	4.1	876	3.3	-28.3%
Lower Eastern Shore	490	3.5	577	4.2	557	3.9	11.4%
Dorchester	112	4.4	103	4.1	106	4.4	0.0%
Somerset	78	5.4	86	6.5	65	4.6	-14.8%
Wicomico	169	2.5	212	3.3	225	3.3	32.0%
Worcester	131	3.7	176	5.0	161	4.3	16.2%
Southern Maryland	930	3.4	1,132	4.1	1,017	3.1	-8.8%
Calvert	220	2.8	340	4.0	320	3.4	21.4%
Charles	456	3.9	483	4.1	464	3.2	-17.9%
St. Mary's	255	3.5	309	4.2	234	2.7	-22.8%
Suburban Washington	4,095	2.9	4,658	3.1	5,153	3.2	10.3%
Frederick	836	4.7	980	5.1	1,030	4.9	4.2%
Montgomery	1,836	2.9	1,870	2.8	2,364	3.3	13.8%
Prince George's	1,423	2.4	1,808	2.9	1,759	2.6	8.3%
Upper Eastern Shore	785	4.6	870	4.9	1,058	5.6	21.7%
Caroline	172	6.3	140	5.0	161	5.6	-11.1%
Cecil	242	3.3	292	3.8	484	5.6	***69.7%***
Kent	132	9.3	121	8.7	69	5.7	-38.7%
Queen Anne's	149	4.3	192	5.3	204	5.0	16.3%
Talbot	90	4.1	125	5.7	140	6.0	46.3%
Western Maryland	1,260	7.1	1,151	6.5	1,100	6.0	-15.5%
Allegany	503	9.1	460	8.6	305	6.1	***-33.0%***
Garrett	194	8.2	230	10.0	242	9.5	15.8%
Washington	563	5.8	461	4.6	553	5.1	-12.1%

Note: Adapted Table 9a. from Report on the 2000 - 2006 Maryland Tobacco Studies, Supplemental Appendices. Report available for download at http://www.mdquit.org/documents/2007Appendices.pdf

Smokeless Tobacco Use for Middle School ONLY

Region/Jurisdiction	2000		2002		2006		Relative Change
	N	%	N	%	N	%	
Statewide	**3,913**	**2.1**	**3,987**	**2.1**	**3,564**	**1.9**	**-9.5%**
Baltimore Region	1,817	2.1	2,024	2.3	1,537	1.8	-14.3%
Anne Arundel	314	1.9	373	2.2	324	2.0	5.3%
Baltimore City	767	3.7	837	4.3	466	2.7	-27.0%
Baltimore Co.	342	1.4	354	1.5	462	2.0	42.9%
Carroll	63	1.0	88	1.3	116	1.7	70.0%
Harford	152	1.7	219	2.4	90	1.0	-41.2%
Howard	179	1.8	152	1.4	80	0.7	-61.1%
Lower Eastern Shore	115	1.8	166	2.7	132	2.2	22.2%
Dorchester	26	2.3	26	2.2	15	1.5	-34.8%
Somerset	28	4.2	19	3.1	15	2.2	-47.6%
Wicomico	25	0.8	80	2.8	75	2.6	225.0%
Worcester	35	2.3	42	2.7	27	1.9	-17.4%
Southern Maryland	289	2.4	255	2.0	162	1.2	***-50.0%***
Calvert	67	1.8	78	2.0	50	1.2	-33.3%
Charles	161	3.1	67	1.3	57	0.9	***-71.0%***
St. Mary's	61	1.9	110	3.3	55	1.5	-21.1%
Suburban Washington	1,148	1.8	1,010	1.5	1,297	1.9	5.6%
Frederick	189	2.3	218	2.5	178	2.0	-13.0%
Montgomery	300	1.0	384	1.3	572	1.9	90.0%
Prince George's	659	2.4	408	1.4	548	1.9	-20.8%
Upper Eastern Shore	210	2.6	237	2.8	214	2.6	0.0%
Caroline	32	2.6	37	2.8	37	3.1	19.2%
Cecil	79	2.2	86	2.3	94	2.5	13.6%
Kent	28	4.4	32	4.9	18	3.9	-11.4%
Queen Anne's	44	2.7	42	2.5	41	2.4	-11.1%
Talbot	27	2.7	40	4.1	24	2.4	-11.1%
Western Maryland	334	4.2	294	3.7	220	2.8	-33.3%
Allegany	79	3.3	80	3.4	35	1.7	-48.5%
Garrett	58	5.4	75	6.9	58	5.0	-7.4%
Washington	197	4.3	139	3.0	128	2.7	-37.2%

Note: Adapted Table 9b. from Report on the 2000 - 2006 Maryland Tobacco Studies, Supplemental Appendices. Report available for download at http://www.mdquit.org/documents/2007Appendices.pdf

Smokeless Tobacco Use for Middle School Males ONLY

Region/Jurisdiction	2000		2002		2006		Relative Change
	N	%	N	%	N	%	
Statewide	**2,990**	**3.1**	**2,708**	**2.8**	**2,261**	**2.4**	**-22.6%**
Baltimore Region	1,401	3.1	1,356	3.1	1,074	2.5	-19.4%
Anne Arundel	258	2.9	270	3.1	222	2.7	-6.9%
Baltimore City	628	6.1	619	6.6	243	2.8	-54.1%
Baltimore Co.	220	1.8	186	1.5	390	3.3	83.3%
Carroll	47	1.4	64	1.9	104	3.1	121.4%
Harford	104	2.2	134	2.8	59	1.3	-40.9%
Howard	145	2.8	84	1.5	57	0.9	-67.9%
Lower Eastern Shore	88	2.6	134	4.3	79	2.6	0.0%
Dorchester	14	2.4	20	3.4	8	1.7	-29.2%
Somerset	20	6.0	14	4.8	12	3.2	-46.7%
Wicomico	25	1.5	70	4.8	44	3.0	100.0%
Worcester	28	3.5	30	3.9	15	2.1	-40.0%
Southern Maryland	198	3.1	168	2.7	114	1.6	-48.4%
Calvert	43	2.2	45	2.2	38	1.8	-18.2%
Charles	110	4.0	45	1.7	30	1.0	***-75.0%***
St. Mary's	45	2.7	78	4.7	46	2.5	-7.4%
Suburban Washington	863	2.6	637	1.8	670	1.9	-26.9%
Frederick	146	3.5	144	3.3	119	2.5	-28.6%
Montgomery	201	1.3	273	1.8	252	1.6	23.1%
Prince George's	516	3.7	220	1.5	300	2.0	-45.9%
Upper Eastern Shore	166	4.0	171	3.9	154	3.7	-7.5%
Caroline	22	3.4	30	4.4	28	4.6	35.3%
Cecil	67	3.8	64	3.3	64	3.2	-15.8%
Kent	21	6.8	17	5.2	16	6.6	-2.9%
Queen Anne's	35	4.1	30	3.4	29	3.3	-19.5%
Talbot	19	3.8	30	6.1	16	3.5	-7.9%
Western Maryland	274	6.7	241	5.8	171	4.2	-37.3%
Allegany	67	5.5	72	5.8	26	2.5	-54.5%
Garrett	53	9.5	63	11.1	45	7.4	-22.1%
Washington	155	6.6	106	4.6	100	4.1	-37.9%

Note: Adapted Table 9c. from Report on the 2000 - 2006 Maryland Tobacco Studies, Supplemental Appendices. Report available for download at http://www.mdquit.org/documents/2007Appendices.pdf

Smokeless Tobacco Use for Middle School Females ONLY

Region/Jurisdiction	2000		2002		2006		Relative Change
	N	%	N	%	N	%	
Statewide	**891**	**1.0**	**1,186**	**1.3**	**1,221**	**1.3**	**30.0%**
Baltimore Region	416	1.0	588	1.4	454	1.1	10.0%
Anne Arundel	56	0.7	92	1.1	92	1.1	57.1%
Baltimore City	140	1.4	176	1.8	223	2.7	92.9%
Baltimore Co.	122	1.1	142	1.2	72	0.6	-45.5%
Carroll	16	0.5	24	0.7	12	0.4	-20.0%
Harford	48	1.1	86	1.9	31	0.7	-36.4%
Howard	34	0.7	68	1.3	23	0.4	-42.9%
Lower Eastern Shore	24	0.8	32	1.0	52	1.8	125.0%
Dorchester	11	1.9	6	1.0	7	1.3	-31.6%
Somerset	7	2.0	4	1.3	2	0.7	-65.0%
Wicomico	0	0.0	10	0.7	31	2.3	***N/A***
Worcester	7	0.9	12	1.5	12	1.7	88.9%
Southern Maryland	90	1.6	83	1.3	49	0.7	-56.3%
Calvert	24	1.4	33	1.8	12	0.6	-57.1%
Charles	51	2.0	22	0.8	27	0.9	-55.0%
St. Mary's	16	1.0	28	1.7	10	0.5	-50.0%
Suburban Washington	259	0.8	364	1.1	557	1.6	100.0%
Frederick	43	1.1	65	1.5	59	1.3	18.2%
Montgomery	99	0.7	111	0.7	249	1.7	142.9%
Prince George's	116	0.9	188	1.3	248	1.7	88.9%
Upper Eastern Shore	42	1.1	66	1.6	61	1.5	36.4%
Caroline	8	1.3	7	1.1	9	1.5	15.4%
Cecil	11	0.6	22	1.3	31	1.6	166.7%
Kent	7	2.2	15	4.7	2	1.0	-54.6%
Queen Anne's	9	1.2	12	1.5	12	1.4	16.7%
Talbot	7	1.5	9	2.0	7	1.5	0.0%
Western Maryland	60	1.5	53	1.4	49	1.3	-13.3%
Allegany	12	1.1	8	0.7	8	0.8	-27.3%
Garrett	5	1.0	12	2.2	13	2.4	140.0%
Washington	43	1.9	33	1.5	28	1.2	-36.8%

Note: Adapted Table 9d. from Report on the 2000 - 2006 Maryland Tobacco Studies, Supplemental Appendices. Report available for download at http://www.mdquit.org/documents/2007Appendices.pdf

Smokeless Tobacco Use for High School ONLY

Region/Jurisdiction	2000		2002		2006		Relative Change
	N	%	N	%	N	%	
Statewide	**10,196**	**4.7**	**11,524**	**5.2**	**12,041**	**4.8**	**2.1%**
Baltimore Region	4,733	4.8	5,099	5.0	5,182	4.7	-2.1%
Anne Arundel	992	4.9	1,126	5.5	1,177	5.4	10.2%
Baltimore City	723	3.4	931	4.4	721	3.4	0.0%
Baltimore Co.	1,015	3.6	1,210	4.2	1,398	4.5	25.0%
Carroll	385	5.0	499	6.3	499	5.3	6.0%
Harford	775	7.6	***512***	***4.9***	591	5.1	***-32.9%***
Howard	843	7.1	820	6.5	797	5.4	-23.9%
Lower Eastern Shore	375	4.9	410	5.4	425	5.1	4.1%
Dorchester	85	6.1	78	5.8	92	6.4	5.0%
Somerset	50	6.4	67	9.3	50	6.7	4.7%
Wicomico	144	4.0	132	3.7	150	3.8	-5.0%
Worcester	96	4.8	134	6.8	134	5.9	22.9%
Southern Maryland	641	4.3	877	5.8	855	4.5	4.7%
Calvert	153	3.6	262	5.8	270	4.9	36.1%
Charles	295	4.5	416	6.4	407	4.8	6.7%
St. Mary's	194	4.8	199	4.9	179	3.7	-22.9%
Suburban Washington	2,946	3.9	3,647	4.6	3,855	4.2	7.7%
Frederick	647	6.7	761	7.4	852	7.1	6.0%
Montgomery	1,535	4.6	1,485	4.0	1,793	4.4	-4.3%
Prince George's	764	2.4	1,401	4.3	1,211	3.2	33.3%
Upper Eastern Shore	575	6.3	633	6.8	843	7.8	23.8%
Caroline	140	9.4	103	7.0	124	7.4	-21.3%
Cecil	164	4.2	206	5.2	***389***	***8.2***	***95.2%***
Kent	103	13.3	89	11.9	50	7.0	***-47.4%***
Queen Anne's	104	5.8	149	7.9	163	6.9	19.0%
Talbot	63	5.2	85	7.0	116	8.6	65.4%
Western Maryland	926	9.6	857	8.8	880	8.4	-12.5%
Allegany	424	13.4	380	12.6	271	9.1	***-32.1%***
Garrett	136	10.6	156	12.9	184	13.2	24.5%
Washington	366	7.0	322	5.9	425	6.9	-1.4%

Note: Adapted Table 9f. from Report on the 2000 - 2006 Maryland Tobacco Studies, Supplemental Appendices. Report available for download at http://www.mdquit.org/documents/2007Appendices.pdf

Smokeless Tobacco Use for High School Males ONLY

Region/Jurisdiction	2000		2002		2006		Relative Change
	N	%	N	%	N	%	
Statewide	**8,015**	**7.5**	**8,419**	**7.8**	**9,218**	**7.5**	**0.0%**
Baltimore Region	3,813	7.8	3,701	7.6	3,918	7.3	-6.4%
Anne Arundel	846	8.3	806	8.1	875	8.3	-0.0%
Baltimore City	628	6.2	694	7.4	490	5.0	-19.4%
Baltimore Co.	749	5.4	878	6.3	1,025	6.7	24.1%
Carroll	292	7.4	378	9.7	418	8.7	17.6%
Harford	625	12.3	***327***	***6.2***	483	8.4	-31.7%
Howard	671	11.2	618	9.9	627	8.5	-24.1%
Lower Eastern Shore	297	7.7	280	7.5	336	8.2	6.5%
Dorchester	64	9.5	47	7.5	64	9.6	1.1%
Somerset	43	11.5	47	14.1	41	11.6	0.9%
Wicomico	111	6.3	94	5.4	123	6.4	1.6%
Worcester	79	7.5	91	9.0	109	9.4	25.3%
Southern Maryland	489	6.6	631	8.9	668	7.3	10.6%
Calvert	114	5.3	180	8.3	203	7.6	43.4%
Charles	224	6.8	307	10.3	320	7.8	14.7%
St. Mary's	151	7.5	144	7.5	145	6.1	-18.7%
Suburban Washington	2,109	5.7	2,651	6.8	2,873	6.4	12.3%
Frederick	538	11.1	600	11.8	712	12.2	9.9%
Montgomery	1,039	6.2	1,025	5.5	1,299	6.3	1.6%
Prince George's	532	3.4	1,026	6.6	862	4.6	35.3%
Upper Eastern Shore	482	10.4	467	10.3	687	12.6	21.2%
Caroline	116	15.2	76	10.5	99	11.8	-22.4%
Cecil	131	6.8	153	8.1	***314***	***13.3***	***95.6%***
Kent	88	24.1	72	19.2	39	10.5	***-56.4%***
Queen Anne's	97	10.3	107	11.4	134	11.6	12.6%
Talbot	50	7.8	58	9.5	101	14.2	***82.1%***
Western Maryland	827	16.9	690	14.4	735	13.7	-18.9%
Allegany	384	24.3	298	19.9	217	13.9	***-42.8%***
Garrett	125	18.4	140	22.9	165	23.2	26.1%
Washington	317	12.1	252	9.4	352	11.3	-6.6%

Note: Adapted Table 9g. from Report on the 2000 - 2006 Maryland Tobacco Studies, Supplemental Appendices. Report available for download at http://www.mdquit.org/documents/2007Appendices.pdf

Smokeless Tobacco Use for High School Females ONLY

Region/Jurisdiction	2000		2002		2006		Relative Change
	N	%	N	%	N	%	
Statewide	**1,903**	**1.8**	***2,710***	***2.4***	**2,754**	**2.2**	**22.2%**
Baltimore Region	825	1.7	1,236	2.4	1,235	2.2	29.4%
Anne Arundel	131	1.3	298	2.9	289	2.6	100.0%
Baltimore City	95	0.9	215	1.8	222	2.0	122.2%
Baltimore Co.	247	1.8	305	2.1	373	2.4	33.3%
Carroll	75	2.0	103	2.6	78	1.7	-15.0%
Harford	128	2.5	161	3.1	108	1.8	-28.0%
Howard	149	2.5	155	2.5	165	2.2	-12.0%
Lower Eastern Shore	68	1.8	117	3.1	89	2.1	16.7%
Dorchester	15	2.2	26	3.7	28	3.6	63.6%
Somerset	5	1.4	19	5.0	9	2.3	64.3%
Wicomico	31	1.7	38	2.1	27	1.4	-17.6%
Worcester	16	1.7	35	3.7	25	2.2	29.4%
Southern Maryland	131	1.8	220	2.8	186	1.9	5.6%
Calvert	36	1.7	82	3.5	65	2.3	35.3%
Charles	59	1.8	83	2.4	86	2.0	11.1%
St. Mary's	37	1.8	55	2.6	34	1.4	-22.2%
Suburban Washington	702	1.9	846	2.1	953	2.1	10.5%
Frederick	90	1.9	136	2.7	128	2.1	10.5%
Montgomery	422	2.5	409	2.2	478	2.4	-4.0%
Prince George's	190	1.2	300	1.8	348	1.8	50.0%
Upper Eastern Shore	85	1.9	143	3.0	151	2.8	47.4%
Caroline	18	2.5	18	2.5	23	2.8	12.0%
Cecil	33	1.7	49	2.3	73	3.1	82.4%
Kent	15	3.7	15	4.1	12	3.3	-10.8%
Queen Anne's	6	0.7	***36***	***3.9***	29	2.4	242.9%
Talbot	13	2.3	25	4.2	14	2.2	-4.3%
Western Maryland	92	1.9	148	3.1	141	2.8	47.4%
Allegany	33	2.1	78	5.2	51	3.6	71.4%
Garrett	11	1.9	15	2.6	19	2.8	47.4%
Washington	48	1.9	54	2.0	71	2.3	21.1%

Note: Adapted Table 9h. from Report on the 2000 - 2006 Maryland Tobacco Studies, Supplemental Appendices. Report available for download at http://www.mdquit.org/documents/2007Appendices.pdf

County Youth Smokeless Use	2000	2006	Change in cigarette smoking
Garrett	8.2	9.5	↓
Allegany	9.1	6.1	* ↓
Washington	5.8	5.1	* ↓
Frederick	4.7	4.9	* ↓
Carroll	3.2	3.8	* ↓
Montgomery	2.9	3.3	* ↓

* Indicates that there were not decreases in All forms of smoking (e.g. bidis)

General Conclusions

- Generally lower rates relative to smoking over the 6 years
  - Particularly among MS youth & Females
- Upper Eastern Shore & Western MD report highest rates
  - Allegany 33% reduction
  - Garrett 16% increase
  - Increases among Males & Females in High School

Discussion

- **Reflections and Questions about the Data**
- **Discrepancies between the data and your experience**

PREVENTION

Maryland's Voluntary State Curriculum-Health Education

- Smokeless education is specifically mentioned for 3rd graders only

The Smokeless Tobacco Outreach and Prevention Guide (S.T.O.P.) Guide

- Factors that Influence Initiation
  - Demographics
    - young, white, male, rural
  - Use of other substances
    - cigarettes, marijuana, alcohol
  - Peer influence
  - Advertising
  - “Additional factors”
    - Perception of risk
    - Social image
    - Parental response (anticipated and actual)

Typical Components of Prevention Programs

- Increasing Awareness of Peer Influence
- Increasing Resistance Skills
- Address desire for social acceptance
- Stress immediate consequences

- Average age for 1st use is 12
- Thus, target population is 5th-7th grades

Discussion: Prevention in Maryland

- What are your counties doing?
- What are the barriers?
- What would you like to see happening in the future?

TREATMENT

Main Goals of Treatment

- Increase Abstinence
- Decrease Craving
- Decrease Withdrawal
  - Dizziness
  - Depression
  - Frustration, impatience, anger
  - Irritability
  - Trouble sleeping (trouble falling asleep/staying asleep, bad dreams/nightmares)
  - Trouble concentrating
  - Restlessness
  - Headaches
  - Tiredness
  - Increased appetite
  - Anxiety

Quitting Smokeless Tobacco

- Step 1: Getting Ready
- Step 2: Plan to Quit
- Step 3: Deal with Withdrawal
- Step 4: Maintaining Abstinence from Smokeless Tobacco

Step 1: Getting Ready
Track Use

- What's your Brand?
- How long does a tin last you?
  - Copenhagen 1 tin/day ≈ 3 packs cig/day
  - Light user: less than 1 tin/pouch a week
  - Moderate: 1 ½ tin/pouch a week
- Do you
  - sleep with it at night?
  - wake up to use in the middle of the night?

Addiction / Exposure level

- Nicotine level of usual product X tins per week
  - E.g., Copenhagen has 30.76 mg/g
    Uses 7 tins/wk, each with 34.02 g
  - 30.76 X 34.02 ≈ 7,325 mg Nicotine

- Adapted Fagerstrom Addiction Scale
  - I chew or dip first thing in the morning within 30 minutes of waking
  - I swallow the juice when I can't spit
  - I chew or dip where it is prohibited
  - I crave ST even when I'm sick in bed

Assess other behaviors that influence quitting smokeless

- **Smoking**
  - Makes it harder to quit
  - Stopping the use of ALL tobacco is recommended
- **Alcohol Use**
  - Try to cut down or quit drinking when quitting smokeless
  - Users chew more when they drink

    (risky levels: 4-7 times a week or 5 + drinks/occasion)
- **Previous Quit Attempts**
  - Indicate desire to quit
  - Increase chance of success

Readiness

- Assess readiness to quit
  - Ready
  - Willing
  - Able

How Do People Change?

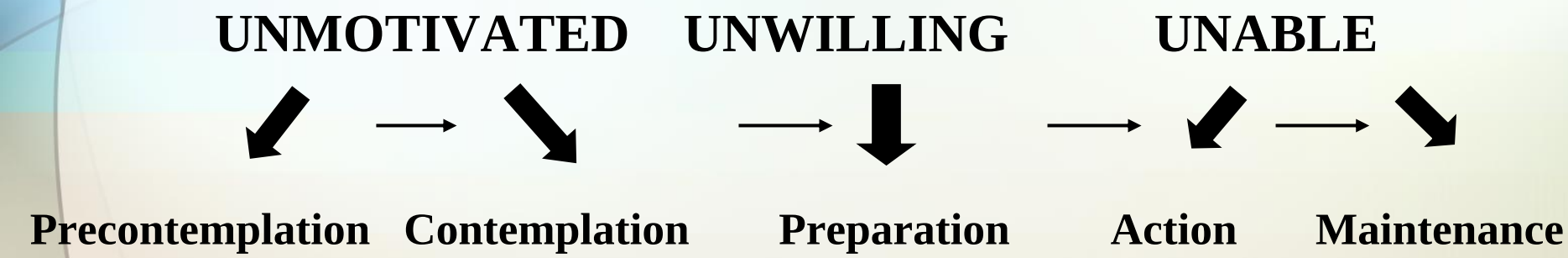
- People change voluntarily only when
  - They become ***interested and concerned*** about the need for change
  - They become ***convinced*** the change is in their best interest or will benefit them more than cost them
  - They organize a ***plan of action*** that they are ***committed*** to implementing
  - They ***take the actions*** necessary to make the change and sustain the change

Stage of Change Labels and Patient Tasks

•Precontemplation • Not interested	→	Become interested and concerned
•Contemplation • Considering	→	Risk-reward analysis and decision-making
•Preparation • Preparing	→	Commitment and creating an effective/acceptable plan
•Action • Initial change	→	Implementation of plan and revising as needed
•Maintenance • Sustained change	→	Consolidating change into lifestyle

DiClemente CC. In: Miller WR, Carroll KM, eds. *Rethinking Substance Abuse: What The Science Shows and What We Should Do About It*. New York: Guilford Press; 2006:81-96.

Understanding Motivation and Movement through the Stages of Change



This Process is as relevant for organizations and service providers as it is for individuals with mental health and addiction problems

Reasons for Quitting

- Assess reasons for quitting and the individual's motivation to quit
  - Avoid health problems
  - Sores/white patches in mouth
  - Save money
  - For others
  - Unattractive habit
  - No control over the addiction

Step 2: Plan for Quitting

- Select a quit plan
- Choose a quit date

Cold Turkey Approach to Quitting

- Help client set and write down a quit date
  - Preferably within the next 2 weeks
- Encourage support from friends and family
- Identify and encourage elimination of triggers
  - Spit cups, clothing with smokeless branding, use while in the car, when drinking, etc.
- Encourage the availability and use of substitutes
  - Gum and mint snuff (non-tobacco chew made of mint leaves)
- Suggest involvement in activities that are not triggers for use

Cold Turkey Method, cont.

- Teach appropriate rewards for success
- Advise the client to drink large amounts of non-alcoholic fluids
- Occasionally call the client, to check on progress
  - Phone calls have been shown to increase success rates both in the short- and long-term

Nicotine Fading

- Set a quit date for 2 weeks away
- Client monitors use for 5 days
- Decrease use by 1-2 dips each day
- Reduce use each day until use is at ½ of typical use
- Advise client to quit completely using cold turkey approach on quit day
- Problems: requires self-restraint, self-monitoring/record-keeping difficult for many clients

Blending

- Set quit date 2 weeks away
- Blend equal amounts of a non-tobacco herbal substitute with the usual product and use for 1 week
- Use 1/3rd smokeless and 2/3^{rds} substitute for an additional week
- Switch entirely to the non-nicotine product
- On quit day, get rid of all tobacco product and use cold turkey approach to aid in remaining ST free

- Problem: This method has NOT been empirically studied or validated

Brand-switching

- Switch to a ST brand with lower nicotine levels
- Repeat brand switching every few weeks until client is ready to quit completely
- Set a quit date and follow the cold turkey approach

- Problems: Some products do not provide information to determine nicotine and pH levels
- Not described in Enough Snuff self-help book

Other Ideas

- Leave pouch/tin at home
- Take gum, candy, sunflower seeds
- Don’t chew in places where you typically use
- Go as long as you can without giving in to cravings– at least 10 minutes
- Pick 3 of your strongest triggers and don’t use during these times

Nicotine Replacement and Medicinal Interventions

- Methods tried/researched
  - Gum (2mg)
  - Patch (21mg)
  - Lozenge
  - Bupropion SR
    - start 1-2 wks before quit date
- Varenicline (Chantix): Not researched

- General outcomes
  - Some methods show reductions in cravings and withdrawal
  - Bupropion attenuated weight gain
  - No significant effect on abstinence

Cochrane Review

- **No significant Benefit in:**
  - **Two trials of bupropion SR with treatment at six months or longer**
  - **Four trials of nicotine patch**
  - **Two trials of nicotine gum**

- **Behavioral interventions**
  - **Six trials showed significant benefits of intervention**
  - **Telephone counseling or oral examinations may increase abstinence rates more than interventions without these components**

Difficulty of Meds

- No standard dose for smokeless
- Great variability in dip size
- Unclear nicotine content

- Measuring blood level of nicotine to determine appropriate NRT dosage is invasive, expensive, unpleasant
  - Plasma nicotine levels
  - Urinary cotinine levels

Making Use Palatable and Fun

Skoal is available in 21 flavors, cuts, and formats

Flavor varieties include: Original Skoal Wintergreen plus Straight, Mint, Classic, Cherry, Spearmint

More recent blends:

Berry Blend, Vanilla Blend, Apple Blend, Peach Blend, Citrus Blend

Nicotine gum now available in 4 flavors!

They make use easy and exciting...

Anytime. Anywhere.

We need to as well...

Behavioral Interventions

- Strong, positive effects are found for:
  - Dental team advice
  - Telephone counseling (CBT)
  - Sports teams interventions
  - Self-help materials (web, video, manual)
    - Herb Severson
  - Some smokeless users report quitting cigarettes is easier

Tips for Successful Quitting

- **Avoid: Avoid trigger situations until one's confidence ability to stay quit increases**
- **Alter: Alter behaviors one typically engages in when using smokeless to reduce the strength of the trigger**
- **Alternatives: By using oral substitutes or other alternatives to smokeless tobacco, the client can stay quit in trigger situations**
- **Activities: Take walks or engage in other physical activities to help distract the client from cravings and thoughts about smokeless tobacco**
  - **If particular activities are triggers for the client, alternative activities should be substituted**

Quitline Protocol

- 1-800-QUITNOW FREE COUNSELOR ACCESS THROUGH THE QUITLINE
- The quit coaches will counsel smokeless as well as cigarette users
- Protocol is essentially the same and personalized to the smokeless products
- If they are willing to try quitting in the next 30 days, they can get 4 counselor/coach telephone sessions

The Counseling Process: What to expect

- Client provides contact information & smoking history.
- Client is connected with a certified Quit Coach™.
- With the help of the Quit Coach™, the client will make decisions about a quit date and potential treatment options.
- Quit Coaches™ are fully trained to give the best advice available to the clients. Many are ex-smokers and can empathize with the client's experience.

Quitline Calls

- **Call One: Quit Date Preparation**
  - **The client and the Quit Coach™ discuss client appropriate techniques and select a quit date.**
  - **Pharmacological options are discussed**
- **Call Two: Quit Date**
  - **Quitline calls within 5 days of the quit date to provide support & create maintenance plan**
  - **Discuss strategies for overcoming withdrawal and cravings**
  - **Help develop coping skills and identify supportive others**

Quitline Protocol

- **Call 3: Follow-up on Progress**
  - **7-10 days after the 2nd call**
  - **Coach™ provides additional information, other tips or techniques, troubleshoots obstacles**
  - **Address lapses, get clients back on track**

- **Call 4: Final Check-In**
  - **3-5 weeks after the 1st call**
  - **Provide support, encourage continued abstinence**
  - **Develop long-term plan to remain tobacco-free for life**
  - **Congratulate successful quit!**
  - **Help others get back on track**

Quitline Materials for Smokeless Users

- Spit Tobacco: A Guide for Quitting
  - U.S Department of Health & Human Services

- Enough Snuff: A Guide for Quitting Smokeless Tobacco
  - Herbert H. Severson, PhD
  - Judith S. Gordon, PhD

Step 3: Deal with Withdrawal

- Drink liquids
- Stay active
- Chew substitutes
  - Bacc Off, Golden Eagle Herbal Chew, Mint Snuff
- Meet with doctor to consider NRT & medication
- Relaxation exercises
- Use support system
- Reflect on reasons for quitting or the positive changes you have made so far

Step 3: Deal with Withdrawal

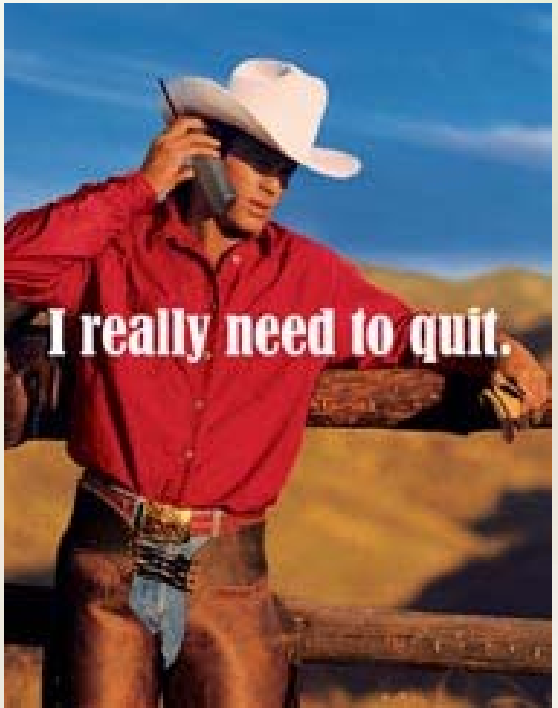
- Have client list symptoms and rate severity on a scale from 1 to 10 on a consistent basis
- As time passes and they are abstinent for a longer period of time, they will see that the severity decreases
- Symptoms are the strongest in the 1st week
- Worst is over after 2 weeks

Step 4: Maintaining Abstinence

- Identify high-risk situations and barriers to cessation
- Create plans to handle difficult situations
- Encourage client to try again
- Quitting is an ongoing process and a slip is normal

Summary of Interventions

- Teachable Moments
  - Dental/oral exam
- Replacement products
- Reducing use
- Blending lower or no-nicotine products
- Telephone based cognitive-behavioral therapy
- Nicotine Replacement
  - Gum, lozenge, patch
- Medications
  - Bupropion



Discussion

- Perceived utility of discussed interventions
- Barriers to implementing and sustaining such interventions
- Other ideas/comments

Why aren't we getting chewers in our groups?

- They do not think of themselves as smokers, so are not likely to attend "smoking cessation" groups
- Only about 50% think its a problem to chew
- Infrequently advised to quit
  - Dental hygienists most likely to ask/advise
- Separate smokers & chewers
- Need to find appropriate ways to market services: sports talk radio, local news ads

Policy/Regulation

- Companies can:
  - Sell products without disclosing toxins
  - Vary toxin levels even though they can be reduced

    (E.g., India > US > Sweden)
  - Vary nicotine levels, add constituents, design products to facilitate initiation and sustain addiction
  - Use flavors to increase initiation & maintenance
  - Advertise products for any type of use

Policy/Regulation

- **What we need to require in regulation:**
  - **Reduce product toxicity and emissions lowest possible levels**
  - **Disclose toxins, nicotine levels & properties that affect addiction**
  - **Establish standard for nicotine levels**
  - **Ban flavored products**
  - **Require scientifically based claims**

- **Hatsukami, Plenary Session, 4th National Summit on Smokeless & Spit Tobacco, March 4-6, 2008**

Resources

- **ChewFree.com**
  - Tailored quit & relapse prevention plan
  - E-forums
  - Assess readiness to quit & level of dependence
  - Tailored recommendations
  - Chose a quit date consistent with quitting method

- **National Spit Tobacco Education Program**
  - www.nstep.org

What's going on now?

- **Herb Severson: Principal Investigator (NCI)**

- **QuitSpit: An Internet-Based ST Cessation Program for Teens (QuitSpit)**
- Develop & evaluate an online smokeless tobacco cessation program for teens and young adults

  Project Period: 8/10/06 - 5/31/10

- **Evaluating Nicotine Lozenges for Treatment of Smokeless Tobacco Addiction**
- Efficacy of using nicotine lozenges for long-term tobacco abstinence among adult smokeless tobacco users

  Project period: 8/14/06 - 7/31/10

- **Tobacco Quitlines: An Adjunct to Dental Interventions (DQL Mississippi)**
- Compare two methods for providing brief dental office-based interventions to help patients quit either cigarette smoking or smokeless tobacco use with usual care

  Project Period: 9/1/03-6/30/08

Conclusions

- Smokeless is not a safe alternative to smoking
- Smokeless has a culture and interventions need to be based on understanding and accessing the values of that culture and how to reach and engage this population
- Think creatively how to reach and influence